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VIRGINIA:

IN THE CIRCUIT COURT FOR THE CITY OF RICHMOND

JOHN MARSHALL COURTS BUILDING

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PHILIP MORRIS COMPANIES, INC., et al.,

Plaintiffs, At Law No. 760CL94X 00816-00

-against-

AMERICAN BROADCASTING COMPANIES, INC., et al.,

Defendants.

-----------------------------------x

July 25, 1995
9:36 a.m.

HIGHLY CONFIDENTIAL - TRADE SECRET

Continued Videotaped Deposition of KENNETH S. HOUGHTON, taken by Defendants, pursuant to Notice, at the offices of McGuire Woods Battle & Boothe, Esqs., 901 East Carey Street, Richmond, Virginia before Gail F. Schorr, a Certified Shorthand Reporter and Notary Public within and for the State of New York

2058443164

http://legacy.library.ucsf.edu/tid/bcr07a00/pdf
Source: https://www.industrydocuments.ucsf.edu/docs/gzhl0001

APPEARANCES:

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-and-
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2445 M Street, N.W.
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BY: JOHN PAYTON, ESQ.,
-and-
ANTHONY G. BROWN, ESQ.,
of Counsel.

ALSO PRESENT:

SHELLEY SANDERS, Videographer
Action Legal Video

08:52:38

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ERRATA SHEET

Corrections or changes to the deposition testimony of:

Kenneth S. Houghton - Volume 2

Page	Line	Correction
4	17	After "did you . . .," insert "go into"
5	8	Add another "on" after "school"
5	10	Insert "O.K." before "What"
5	12	Insert "at" between "Well," and "Continental
5	15	Insert "O.K." before "Continental"
5	21	Insert "O.K." before "you said"
5	23	After "Well," insert "I was"
6	2	Insert "O.K." before "And from"
6	10	Add another "I" before "did"
7	3	Add another "we" after "business"
7	15	Insert "it, it" before "was"
7	25	Add another "I" after "before"
8	4	Add another "that was" after "but"
8	6	Insert "O.K." before "Philip Morris"
8	13	Insert "O.K." before "the Plant"
8	19	Insert "and" before "what"
8	22	Add another "the" after "over" - before "next"
9	2	Insert "O.K." before "Are you"
9	4	Add another "I" before "don't"
10	4	Add another "with" before "Mr. Murphy"
10	22	Insert "And" before "Have you"
12	2	Add another "that" after "Files"
12	12	Add another "that" after "notifying"
12	16	Insert "And" after "Okay" - before "Can"

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Kenneth S. Houghton

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ERRATA SHEET

Corrections or changes to the deposition testimony of:

Kenneth S. Houghton - Volume 2

Page	Line	Correction
13	21	Add another "I" before "may have"
14	7	Delete "an." Insert "a" after "not" - before "Employee"
14	10	Add another "I" before "Believe"
15	12	Delete "an." Insert "a" after "produced"
15	20	Insert "Let me ask . . ." before "Let me go back."
16	9	Insert "And" before "Do you recall"
16	15	Add another "I" before "I"
17	2	Delete "an" and insert "a" after "There was"
17	4	Delete "it" before "meant"
17	6	Insert "O.K." before "And." Add another "What" after "And"
18	4	Insert "I'm going to ask him" after "The first one." before "Do"
19	14	Insert "If" before "Are you"
19	18	Insert "or compound" after "Produced" - before "or"
20	16	Insert "O.K." before "Let me ask"
20	22	Add another "I don't" before "I'm having"
21	6	Insert "and" after "Okay" - before "Do you"
21	13	Insert "I am, I" before "I can recall"
21	22	Insert "O.K." after "with it" - before "We got"
21	22	Insert "we got, we" before "We got Licorice"
21	23	Add another "Those" before "Those are"
22	20	Add another "a" after "of" - before "few"
22	20	Add another "I" before "That"
22	22	Insert "O.K." before "But you"
22	25	Insert "Prior to 19 . . . prior to . . ." before "Are you"
24	19	Insert "I" before "I'm." Delete "going to." Insert "gonna" before "to attempt"

Kenneth S. Houghton

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ERRATA SHEET

Corrections or changes to the deposition testimony of:

Kenneth S. Houghton - Volume 2

Page	Line	Correction
	Between Lines 20 and 21	Mr. Payton says "O.K."
24	24	Insert "No" before "That's"
25	2	Add another "If he" after "John,"
25	6	Insert "I" after "No" - before "I'm"
25	16	Delete "I'm going to instruct" and replace with "Dr. Houghton, I'm instructing"
25	13	Delete "Learned it" before "independently." Insert "Knows this information" before "independently"
26	14	Add another "I don't" before "What the"
26	17	Insert "O.K." before "Dr. Houghton"
28	15	Add another "at" after "me"
28	16	Add another "Who" after "O.K."
28	16	Add another "What" after "mean"
28	21	Add another "and" before "I believe"
29	18	Add another "I'm" before "Just"
30	19	Add another "I" before "don't recall"
30	21	Insert "O.K." before "up to that"
31	14	Insert "Uh" before "The"
31	18	Delete "19" after "to" (should read "83?")
31	20	Add another "or" before "having an"
32	15	Add another "and" after "time"
32	22	Add another "I" before "believe"
33	9	Add another "he" before "had"
33	11	Add another "I" before "got there"
33	22	Add another "for" before "a person"
33	24	Add another "of" before "early retirement"

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Kenneth S. Houghton - Volume 2

Page	Line	Correction
34	8	Add another "he" before "accepted"
35	20	Insert "This" before retirement"
35	22	Add another "and" before "be financially"
35	22	Add another "in" before "a good"
35	22	Delete "a"
36	9	Insert "year" after "1994?"
37	10	Insert "O.K. and" before "are studies"
38	2	Insert "O.K." before "Are there"
38	21	Add another "are" after "Bench Scientists"
38	22	Insert "O.K." after "notebooks"
38	23	Insert "Well" before "Could you"
39	16	Insert "at the" after "maintained"
40	13	Add another "I'm" before "a little." Add another "What" before "are"
41	2	Delete "the" before "supervisor." Insert "every" before "supervisor"
41	3	Insert "it" after "such," - before "I"
42	12	Add another "I'm" before "not"
42	16	Insert "O.K., And" before "at the"
43	11	Add another "and" before "I'm not"
43	21	Add another "I" before "don't know"
46	17	Add "I," before "I just don't know."
47	4	Add another "through" after "department"
48	10	Add "And" before "Had you had"
48	23	Add another "As I" before "mentioned"
49	23	Insert "" before "how" and after "to"

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ERRATA SHEET

Corrections or changes to the deposition testimony of:

Kenneth S. Houghton - Volume 2

Page	Line	Correction
50	7	Add another "I'm" before "not sure"
50	7	Insert "" before "how" and after "to"
51	15	Insert "," after "recall" and after "position"
52	19	Add another "I" before "don't recall"
55	12	Add another "I" before "mentioned"
55	19	Insert "he" between "that" and "may"
55	25	Add "O.K." before "did he"
57	8	Add "I just" before "I mean Lilly"
57	Between Lines 17 and 18	Dr. Houghton asks the question "Do I have it in here?"
59	21	Add another "I" after "and" and before "don't recall"
62	18	Add "and" before "Do you"
63	8	Add another "I'm" before "Just"
63	9	Add "O.K." before "And was"
63	21	Insert "it," between "on" and "Philip"
64	17	Replace "Whom" with "Who"
64	25	Add "I" after "I would" - before "would believe"
68	13	Insert "in the smoke" between "things" and "that"
68	13 and 14	Insert "In the smoke" - after "of things" and before "that contribute"
73	4	Add another "that" before "was utilized"
73	12	Add another "in" after "Ennis" - before "describing"
74	17	Insert "it" between "--" and "was"
75	5	Add "O.K." before "It's a term"
76	21	Add "I am" before "I'm not"
	End of Tape 3	

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Corrections or changes to the deposition testimony of:

Kenneth S. Houghton - Volume 2

Page	Line	Correction
	Begin Tape 4	
77	24	Insert "Are you" before "Using that definition"
78	17	Add another "we" before "did a lot of testing"
79	3	Add "O.K." before "Do you recall"
79	8	Add "I'm" before "I'm not -- I'm not sure"
79	19	Add another "In" at beginning of answer
81	8	Add "O.K." before "And do you"
81	21	Delete "he" before "has been in"
81	22	Add another "he" before "studied medicine"
82	7	Add another "I" before "have an understanding"
82	12	Add two "I's" before "My understanding"
82	23	Add another "I've" before "heard that"
83	21	Add another "in" before "processing"
84	18	Add another "that" before "are . . ."
101	20	Delete "drying" and replace with "dryer"
103	23	Insert "previous" between "his" and "testimony"
105	4	Delete "in" and replace with "and"
107	20-25	[These lines cannot be heard on tape]
108	14	Insert "No," before "I don't"
110	25	Insert "," after "filter"
111	24	Delete "and" and replace with "to"
112	10	Delete "additional" and replace with "addition"
113	18	Insert "percent" after "one"
118	12	Delete "means to" and replace with "is for"
119	7	Insert "let me find the one," between "page" and "--"
121	22	Insert "," after "it"

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Kenneth S. Houghton - Volume 2

Page	Line	Correction
124	17-23	[These lines cannot be heard on tape]
124	23	Delete "202133743" and replace with "2021337413"
125	5	Delete "202133743" and replace with "2021337413"
135	3	Delete "type" and replace with "time"
136	14	Change "you" to "your" and add "point"
136	21	Delete "in the" and replace with "and"
136	24	Delete "in" and replace with "and"
138	6	Insert "before" between "Houghton" and "the"
140	18	Delete "was" and replace with "is"
147	All	Duplicate
152	12	Add "It's further than that."
152	18	Change "A" to "M"
155	15	Insert "them" between "on" and "'89"
161	3	Insert "Well" before "Like"
161	8-14	[These lines cannot be heard on tape]
161	13	Delete "20212529528" and replace with "2021529528"
161	18	Delete "20212529528" and replace with "2021529528"
162	12	Add "of the document."
164	9	Delete "it's" and replace with "it was"
164	10	Insert "relevant" between "the" and "portion"
164	10	Add "s" to "portion"
164	11	Insert "one-half" between "four" and "pages"
165	25	Delete "devise" and replace with "devices"

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ERRATA SHEET

Corrections or changes to the deposition testimony of:

Kenneth S. Houghton - Volume 2

Page	Line	Correction

RI-LIT
T:\PM\MAM\HOUGHTN2.ERA
07/29/96 (9:35am)

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Kenneth S. Houghton

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09:35:56 THE VIDEO OPERATOR: Today is
09:36:00 Tuesday, July 25th, 1995. This is the
09:36:02 continuation of the deposition of Dr. Kenneth
09:36:10 Houghton. The time on the screen is 9:36:10.
09:36:10 You're on the record.

K E N N E T H S. H O U G H T O N,
resumed, having been previously duly sworn, was examined and testified further as follows:

CONTINUED EXAMINATION

09:36:12 BY MR. PAYTON:
09:36:14 Q. Good morning, Dr. Houghton.
:36:16 A. Good morning, Mr. Payton.
09:36:52 Q. Dr. Houghton, I just want to go over
09:36:54 your resume briefly to fill in a few of the
09:36:56 gaps. I think I understand them, but I'd like
09:37:00 you to tell me.
09:37:08 You attended St. Peter's College and
09:37:12 got a Bachelor's of Science degree in chemistry
09:37:12 in 1962; is that correct?
09:37:12 A. That's correct.
09:37:16 Q. And what did you do after graduating
09:37:16 from college?
09:37:22 A. For the next year I attended the
:37:26 University of Maryland graduate school in

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09:37:28 chemistry.
09:37:30 Q. Okay.
09:37:34 A. And then after that year at the
09:37:40 University of Maryland I -- my next activity was
09:37:44 to report for active duty with the U.S. military.
09:37:46 Q. This is in 1963?
09:37:48 A. It was in the beginning of 1964.
(At this time, Ms. Robbins entered
the deposition room.)
09:37:56 MR. PAYTON: Just an aside here,
09:37:58 Barbara, I have borrowed your copy of
:38:00 Dr. Houghton's resume and I'm just filling in
09:38:02 some gaps.
09:38:08 MS. ROBBINS: Ha. Okay.
09:38:12 MR. MURPHY: We're up to college.
09:38:16 Q. What branch of the service did you --
09:38:20 A. I was in infantry, U.S. Army.
09:38:22 Q. And how long were you in the army?
09:38:28 A. I was on active duty until I think it
09:38:30 was July of 1966.
09:38:36 Q. And when you got out of the army in
09:38:38 1966, what did you do?
09:38:42 A. I went to work for a company called
:38:44 Continental Chemical Company.

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09:38:48 Q. In what capacity?
09:38:50 A. The title was chief chemist.
09:38:54 Q. And how long were you at Continental
Chemical?
09:38:58 A. I stayed at Continental Chemical I
09:39:08 believe until February of 1969 when I then went
09:39:10 to graduate school on a full-time basis. I'd
09:39:14 been going part time while I worked.
09:39:20 Q. What did you do at Continental
Chemical?
09:39:22 A. Well, Continental Chemical Company, I
:39:24 was responsible for quality assurance and new
09:39:30 product development for detergents, surfactants.
09:39:36 Q. Continental Chemical manufactured
09:39:38 consumer goods, is that what they did?
09:39:42 A. No. They were a manufacturer of raw
09:39:46 materials that were used by other companies in
09:39:50 formulating products like liquid detergents or
09:39:52 shampoos.
09:39:58 Q. You said you were the chief chemist.
09:40:02 Did you supervise other chemists or technicians?
09:40:08 A. Well, I was probably the only chemist
09:40:12 there, as I recall, at the time, but I did have a
:40:12 few technicians that worked for me.

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09:40:30 Q. And from 1969 to 1972 were you a
09:40:32 full-time student?
09:40:34 A. I was a full-time graduate student
09:40:42 from February '69 to August of 1970 when I went
09:40:44 to work for the Lightfoot Company.
09:40:56 Q. And when you were working at
09:41:06 Continental Chemical, was that as a, actually as
09:41:10 a chemist? Did you perform duties as a chemist?
09:41:14 A. I did product development work. I
09:41:20 did do testing, quality assurance testing for I
09:41:24 guess approximately two years. The last year I
:41:30 was there I had the title plant manager.
09:41:40 Q. And how large was the plant that you
09:41:42 were managing?
09:41:48 A. What I recall is there may have been
09:41:54 10 or 12 people that worked in the plant full
09:41:56 time. That included the laboratory.
09:42:00 Q. Where was Continental Chemical
09:42:02 located?
09:42:04 A. It's located in Clifton, New Jersey.
09:42:08 Q. And the Lightfoot Company, where was
09:42:08 it located?
09:42:10 A. In Hoboken, New Jersey.
:42:20 Q. How large was the Lightfoot Company?

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A. I recall that at the time Philip Morris sold off the business we had somewhere in the vicinity of 250 employees.

Q. And in 1974, you left the Lightfoot Company and came to Park 500?

A. Yes. But at that time there was no Park 500. The plant was under construction and, if I recall correctly, at that time the operation was referred to as the Hopewell Processing Company.

Q. Did you play any role in the construction of Park 500?

A. I was responsible at the time for the laboratory design, equipment, what capability was required in order to perform the process control quality assurance activity. So from that point of view, I had some responsibility for design and construction, at least from the laboratory point of view.

Q. Okay. Prior to that involvement in Park 500, had you had any association with Philip Morris's cigarette making business?

A. I had no, no experience with the cigarette making business. A few weeks before I

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went down to Richmond to take this job I did tour the Schweitzer facility in Spotswood, New Jersey, but that was the only experience I had with tobacco.

Q. Did Philip Morris ask you to tour the Schweitzer facility in New Jersey?

A. Yes.

Q. Why?

A. Because I was a few weeks later going to be working full time for the project to build the plant.

Q. The plant that was being built at Park 500 in 1974, do you know if that was to use the Schweitzer process?

A. Yes.

Q. It was?

A. Yes.

Q. What did you know about reconstituted tobacco in 1974 when you started at Park 500?

A. I knew very little when I -- when I joined the project team, but over the next year and a half or so that it took for construction before the plant was started up, I learned everything I could about the process.

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Q. Are you familiar with a Philip Morris document entitled "The RL Process Overview"?
A. I don't recall a document with that title.
Q. Now, Dr. Houghton, when did you learn you were going to be a deponent in this case?
A. I believe it was, I don't know, a few weeks ago I received notification that I had been notified. The lawyers told me --
MS. ROBBINS: Noticed.
A. Noticed, excuse me, noticed.
Q. Watch out for our jargon, right?
A. Well, you know, you -- your business has its jargon and I guess ours does too.
MR. MURPHY: But our business makes organic chemistry look succinct.
THE WITNESS: Perhaps.
Q. Would you tell me just generally how you have prepared for your deposition today?
A. I have --
MR. MURPHY: I'll just instruct you, Dr. Houghton, not to reveal any communications of substance that you've had in connection with the preparation. You can describe the process

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generally.

A. I've spent four or five days or so with Mr. Murphy.

Q. Did you review any documents in your files?

A. I don't recall reviewing any documents or reading any documents from my files.

Q. Okay. Did you review any other documents?

A. I don't recall reading any documents.

Q. You don't recall reviewing any documents in preparation for your deposition?

A. Relative -- I did not read any documents. Mr. Murphy may have asked me questions that were related to documents --

MR. MURPHY: Don't go into that. I don't want you the testify as to our conversations. Mr. Payton is not asking you that question. He's asking you whether you recall reviewing any documents or reading any documents.

Q. Have you spoken to any other Philip Morris employees about their depositions in this case?

A. No, I have not.

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Q. Have you spoken to any Philip Morris employees about your deposition?

A. No.

MR. MURPHY: John, when you say spoken to any other Philip Morris employees, you mean other than in connection with the scheduling of absences from work?

MR. PAYTON: Yes.

MR. MURPHY: Dr. Houghton has a supervisory responsibility and the fact of the deposition being scheduled --

MR. PAYTON: Yes, I do not mean that.

A. My secretary knows where I am, okay.

Q. Since you have been the vice president, since 1986 when you've been the vice president for R&D, have you maintained personal files at Philip Morris?

A. What do you mean by personal files?

Q. Have you maintained files in which you keep your own correspondence and other documents you receive in the course of your work at Philip Morris?

A. I don't keep a personal set of

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09:49:24 files. My secretary keeps a set of files that --
09:49:26 are documents that have come to me.
09:49:26 Q. So your secretary maintains your
09:49:26 files?
09:49:28 A. Yes.
09:49:34 Q. And do you recall being notified that
09:49:40 there was a request for documents served on
09:49:40 Philip Morris in this case?
09:49:46 A. Specifically I don't recall a piece
09:49:50 of paper saying that, but I have received
09:49:56 documents like that notifying that there was
:50:00 gonna be a case, and this has happened in the
09:50:02 past. I just don't recall there's one that said
09:50:04 specifically ABC. I believe so.
09:50:14 Q. Okay. Can you tell me how the files
09:50:18 that your secretary maintains were searched with
09:50:22 respect to the document request in this case?
09:50:24 MR. MURPHY: Objection to form. You
09:50:24 can answer.
09:50:26 A. What I recall is my secretary
09:50:34 arranged the time for -- for paralegals to come
09:50:38 in and look through all of my files and I believe
09:50:44 she organized everything to get the files
:50:44 searched.

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Q. You didn't play any role?

MR. MURPHY: Objection to form. You can answer.

A. I -- I was aware of it. Obviously she would have told me that -- that this was being organized at the time, and as I recall, you know, I had no objection to it. I knew it was -- what was to be done.

Q. From 1977, I'm simply looking at your resume, Dr. Houghton, from 1977 to 1980 you were the general manager of Park 500?

A. Yes, sir.

Q. During that time period, was the second line built at Park 500?

A. If I recall correctly, the second line came on stream I believe in 1977, I just don't recall when.

Q. Did you play a role in the design of the second line?

A. I may have played an overall role in the -- in the design direction of the second line. I don't -- I would not have been the engineer at that time in charge of process or building. But obviously, as a member of the

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09:52:40 management team when it started, I would have had
09:52:44 some role to play in there, but I am not an
09:52:46 engineer.

09:53:02 Q. Was Harold Burnley at Park 500 during
09:53:04 this time period, 1977 to 1980?

09:53:10 A. He was not an employee of the Park
09:53:14 500 facility or organization down there. But as
09:53:18 a member of the Philip Morris engineering
09:53:24 department I believe he would have spent some
09:53:26 time there on managing projects.

09:53:28 Q. Did you know him though?

:53:30 A. Did I know him?

09:53:30 Q. Yes.

09:53:30 A. Yes.

09:53:38 Q. And from 1980 to 1983 you were the
09:53:40 general manager of the Richmond processing
09:53:40 plants?

09:53:42 A. That's correct.

09:53:44 Q. What comprises the processing plants?

09:53:46 A. At that time --

09:53:46 MR. MURPHY: As of that time?

09:53:48 MR. PAYTON: Yes.

09:53:50 A. At that time Richmond processing
:53:56 plants included an export blended strip operation

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at the 20th Street facility, it included an expanded tobacco process at Westab, it included the Richmond stemmery, it included the BL plant, it included at that time Park 500 and the Dock Street facility, and it included the flavor center.

Q. What is Westab?

A. Westab was a small facility located in Richmond near the Stockton Street cigarette manufacturing plant, and what it did at that time is it produced an expanded tobacco for the use in -- in cigarettes.

Q. Do you know what Liggett filler is?

A. Do I know what Liggett --

Q. Liggett filler is?

A. -- is. In relationship to what?

Q. In relationship to Liggett filler being made at Westab. Is there a Westab Annex? Let me go back. Is there a Westab Annex?

A. There was --

MR. MURPHY: Was there a Westab Annex as of '77 to 1980 or at some point during that time period?

Q. At some --

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09:55:40 A. 1980 to -- we're talking about '80 to
09:55:40 '83?
09:55:42 MR. MURPHY: Excuse me, I misspoke.
09:55:44 Q. Prior to March 24, 1994, are you
09:55:46 aware of there being a Westab Annex?
09:55:50 A. There was a building referred to as
09:55:50 Westab Annex.
09:55:58 Q. Do you recall that at some point
09:56:02 prior to March 24, 1994 Liggett filler was
09:56:04 manufactured in the Westab Annex?
09:56:06 MR. MURPHY: Objection to form and
:56:08 lack of foundation. You can answer the
09:56:10 question.
09:56:12 A. I -- I'm having a problem
09:56:16 understanding Liggett filler. Filler for me
09:56:20 is -- is the tobacco in the cigarette. I do not
09:56:24 believe during that period of time that we made
09:56:34 cut filler at Westab. All I recall is making
09:56:36 expanded tobacco at Westab.
09:56:38 Q. Okay. And do you recall whether or
09:56:42 not Liggett expanded tobacco was made at the
09:56:44 Westab Annex?
09:56:46 MR. MURPHY: Objection to form. You
:56:46 can answer.

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A. What I recall is that there was an expanded tobacco that was manufactured there referred to as LET, which was Liggett, it meant Liggett expanded tobacco.

Q. And what was Liggett expanded tobacco?

A. It was a blend component that was used in manufacturing the Liggett -- the previous products that were owned by Liggett for their export business that had been purchased from Liggett by Philip Morris.

Q. And was the Liggett expanded tobacco that was produced at Westab used in any other cigarettes that Philip Morris manufactured?

MR. MURPHY: By any other cigarettes, John, are you directing your question to commercial domestic cigarettes, U.S. market cigarettes? I think that's an appropriate question. I think if you're questioning him about the use of Liggett expanded tobacco, if any, in any export brand, that that's outside the scope of appropriate discovery in this case.

MR. PAYTON: Well, I think the order of my questions is to find out if there were any

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others and then I'll ask him if he knows what they were. I don't know if he knows the second question and it will corrupt the first one. Do you understand that?

MR. MURPY: I understand what you're saying.

MR. PAYTON: I'm going to ask him if he knows about any others and then I'll ask what he knows about any others.

MR. MURPHY: With an agreement that we're not waiving our position with respect to export discovery, I'll let you approach it that way.

MR. PAYTON: I understand that.

Q. The question I want to ask you is do you know if the Liggett expanded tobacco that was made at the Westab Annex was used in any other cigarettes besides the Liggett cigarettes?

A. I don't recall LET being used in non-Liggett cigarettes. I just don't recall that being the case.

Q. Now, during this time period, this is 1980 to '83, what was the flavor center?

A. What was it?

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09:59:00 Q. Yes.
09:59:04 A. It was a building where we produced
09:59:14 or compounded flavors for use in domestic
09:59:18 cigarette production as well as for export
09:59:18 business.
09:59:26 Q. And the components that were used to
09:59:28 make the flavors, do you follow me, there were
09:59:32 components that were used to make flavors; is
09:59:32 that correct?
09:59:32 MR. MURPHY: Objection to form. If
09:59:34 you understand what he's asking you, you can
:59:36 answer the question.
09:59:40 A. Are you asking me was a flavor system
09:59:44 made up of various materials put together for --
09:59:48 for the purpose? The answer is yes.
09:59:48 Q. Okay. You said that the flavor
09:59:52 center was a building where we produced or
09:59:56 compounded flavors, okay. Let me go one at a
10:00:02 time. Did Philip Morris produce flavors itself?
10:00:04 MR. MURPHY: Time frame?
10:00:06 Q. 1980 to '83 at the flavor center.
10:00:08 MR. MURPHY: Okay.
10:00:10 A. What we were doing at the time is we
:00:14 would take ingredients, we would blend them

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10:00:20 together in certain proportions based upon
10:00:24 specification, and that's what I call
10:00:26 compounding, okay, putting or producing --
10:00:30 putting them together, and then we would send
10:00:34 those flavors to the appropriate place to be used
10:00:38 on -- on tobacco for cigarette manufacturing.
10:00:42 Q. Focusing on the ingredients that were
10:00:46 used at the flavor center, were those ingredients
10:00:48 purchased from outside suppliers?
10:00:48 MR. MURPHY: Same time frame?
10:00:50 MR. PAYTON: Yes.
:00:50 MR. MURPHY: You can answer if you
10:00:52 understand the question.
10:00:56 A. As I recall, yes.
10:01:00 Q. Let me ask the other side of that
10:01:02 question so it's clear. Did Philip Morris itself
10:01:06 produce any of the ingredients that were supplied
10:01:10 to the flavor center?
10:01:12 MR. MURPHY: Objection to form. You
10:01:12 can answer.
10:01:16 A. I don't -- I'm having problems with
10:01:22 the term produced, okay. We would buy materials
10:01:32 from outside. Some of those materials we may --
:01:36 we may do something with, combine it with other

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things, okay, and then take that material and further combine it with other ingredients, but I don't -- I don't recall us generating new flavor ingredients from some other material, okay.

Q. Okay. Do you recall any of the suppliers of the ingredients that the flavor house used?

MR. MURPHY: Same time frame?

MR. PAYTON: Same time frame.

A. That the flavor center used?

Q. Flavor center, I'm sorry.

A. I can recall some of the suppliers that -- that provided materials there.

Q. Okay.

A. Eastman Chemical which was part of Eastman Kodak at the time. I'm not sure, IFF.

Q. That's International Flavors & Fragrances?

A. International Flavors & Fragrances. One company was called Neale and I can't remember the initials that go with it. We got licorice there from MacAndrews & Forbes. Those are some of the -- the supplier names as I recall right now.

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10:03:32 Q. Do you recall if the flavor center
10:03:36 purchased tobacco extract in this time frame,
10:03:38 1980 to 1983?
10:03:40 MR. MURPHY: Objection to form. You
10:03:40 can answer.
10:03:46 A. Am I aware today?
10:03:48 Q. Yes, do you remember --
10:03:48 A. That they did?
10:03:50 Q. That's right.
10:03:52 A. The answer is I am aware today. I do
10:03:56 not remember -- I was not aware that I know of in
:03:58 1980 to '83.
10:04:02 Q. And the time frame 1980 to '83, back
10:04:08 in that time frame you were not specifically
10:04:10 aware of any purchases of tobacco extract by the
10:04:12 flavor center?
10:04:14 A. I don't -- I don't recall having
10:04:20 knowledge of what the materials were supplied by
10:04:24 anybody outside of a few direct materials that I
10:04:24 had heard of.
10:04:44 Q. But you later came to learn that in
10:04:48 this time frame, 1980 to '83, the flavor center
10:04:52 did purchase tobacco extract?
:04:52 MR. MURPHY: Are you asking him

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10:04:54 whether he came to learn this prior to March 24,
10:04:58 1994?
10:04:58 MR. PAYTON: No.
10:05:00 MR. MURPHY: Well I'm going to
10:05:02 instruct the witness to limit his answer to what
10:05:06 he learned prior to March 24, 1994. But you can
10:05:06 answer the question.
10:05:08 MR. PAYTON: Let's stop for a
10:05:10 second. You're going to instruct your witness to
10:05:12 not reveal information about what Philip Morris
10:05:14 did in 1980 to '83?
:05:16 MR. MURPHY: No, I'm going to
10:05:18 instruct -- your question -- your question says
10:05:20 "But you later came to learn that in this time
10:05:24 frame, 1980 to '83, the flavor center did
10:05:28 purchase tobacco extract?" I'm instructing the
10:05:32 witness that if he learned of this fact after
10:05:34 March 24, 1994, either through conversations with
10:05:36 Philip Morris's counsel or otherwise, that that
10:05:38 is outside the scope of discovery in this
10:05:40 litigation.
10:05:42 MR. PAYTON: That just couldn't be
10:05:44 right. You want to instruct him on that, that a
:05:46 fact about whether or not Philip Morris did

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10:05:50 something in 1980 to 1983, you're going to
10:05:52 instruct this witness to not give it to me?
10:05:54 MR. MURPHY: No, I will let him
10:05:56 answer what he knows. I do not want him,
10:05:58 however, to go into conversations that he may
10:06:00 have had after March 24, 1994.
10:06:02 MR. PAYTON: But if he learned this
10:06:02 fact after that --
10:06:04 MR. MURPHY: John, I'll let him
10:06:06 answer whether he learned this fact and whether
10:06:08 he knows as he sits here today what Philip Morris
:06:12 did in 1980 to '83, but I want the witness not to
10:06:14 go into conversations that he may have had after
10:06:16 March 24, 1994.
10:06:16 MR. PAYTON: Okay.
10:06:18 MR. MURPHY: With that clarification,
10:06:20 Dr. Houghton, can you answer the question?
10:06:24 A. I'm going to attempt to answer the
10:06:24 question.
10:06:28 MR. MURPY: I also want you to
10:06:30 exclude from your answer anything that you
10:06:32 learned from counsel.
10:06:32 MR. PAYTON: That's the same
:06:32 problem.

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10:06:34 MR. MURPHY: John, if he had an
10:06:36 attorney/client communication during the course
10:06:40 of which he learned information from attorneys --
10:06:40 MR. PAYTON: It's a fact.
10:06:42 MR. MURPHY: No, I'm not going to let
10:06:44 him testify --
10:06:46 MR. PAYTON: It's not advice, it's a
10:06:46 fact.
10:06:48 MR. MURPHY: I'm not going to let him
10:06:48 testify as to information he learned during the
10:06:52 course of communications with lawyers. If he
:06:52 learned it independently --
10:06:54 MR. PAYTON: Instruct him and we'll
10:06:56 go to the judge. Just instruct him.
10:06:56 MR. MURPHY: Dr Houghton I'm ~~going to~~ instruct
10:06:58 you to answer the question that's been put to
10:07:00 you, but to exclude from your answer information
10:07:02 that you obtained during the course of
10:07:06 confidential attorney/client communications on
10:07:08 the subject of this lawsuit or otherwise. If you
10:07:12 came to learn information with respect to what
10:07:16 Philip Morris was doing between 1980 and 1983
10:07:20 through a source other than communications with
:07:22 counsel during the course of counsel providing

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10:07:24 legal advice to Philip Morris, you may answer the
10:07:24 question.
10:07:28 Q. Do you accept the instruction of your
10:07:30 counsel, Dr. Houghton?
10:07:32 A. I think I understand it and I accept
10:07:32 it.
10:07:36 Q. Dr. Houghton, did you at some time
10:07:40 after 1983 come to learn that the flavor center
10:07:48 in the time frame 1980 to 1983 purchased tobacco
10:07:48 extract?
10:07:50 MR. MURPHY: Same instruction. You
:07:50 may answer the question.
10:07:58 A. I don't know what the flavor center
10:08:06 was purchasing in 1980 to '83 with reference to
10:08:08 tobacco extracts.
10:08:48 Q. Dr. Houghton, I asked you five
10:08:54 minutes ago if you were aware today whether or
10:08:56 not the flavor center purchased tobacco extract
10:09:04 1980 to 1983 and the answer you gave was "I am
10:09:06 aware today."
10:09:08 MR. MURPHY: Just a moment.
10:09:16 Q. I'll read the whole answer, "The
10:09:18 answer is "I'm aware today, I do not remember --
:09:24 I was not aware that I know of in 1980 to '83."

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10:09:32 MR. MURPHY: Again, Dr. Houghton, you
10:09:34 can give your best recollection of what you know
10:09:38 on this subject, but I want you to exclude from
10:09:40 your answer anything that you have learned during
10:09:42 the course of communications with counsel for the
10:09:46 purpose of counsel providing legal advice to
10:09:48 Philip Morris in connection with this lawsuit or
10:09:48 otherwise.

10:09:52 Q. I'm going to ask a yes or no
10:09:54 question, Dr. Houghton. This is yes or no. Are
10:09:56 you aware today whether or not the flavor center
:10:00 in the time period 1980 to 1983 purchased tobacco
10:10:02 extract?

10:10:04 MR. MURPHY: Same instruction. You
10:10:04 can answer the question.

10:10:10 A. I am not aware today if the flavor
10:10:14 center was purchasing in the time frame 1980 to
10:10:18 1983 tobacco extracts.

10:10:20 Q. Okay. Are you aware today whether
10:10:24 the flavor center at any time prior to March 24,
10:10:30 1994 purchased tobacco extract?

10:10:30 MR. MURPHY: Same instruction. Do
10:10:32 you understand the instruction, Dr. Houghton?

:10:34 THE WITNESS: Yes, I do.

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10:10:36 MR. MURPHY: Okay, you can answer the
10:10:36 question.
10:10:36 A. Yes, I am aware that Philip Morris
10:10:40 purchasing purchased tobacco extracts for the
10:10:40 flavor center.
10:10:46 Q. Prior to March 24, 1994?
10:10:46 A. Prior to that period of time, yes.
10:10:58 Q. And did you become aware of that fact
10:11:08 outside of communications with your counsel?
10:11:14 A. I believe so.
10:11:16 Q. And from whom did you learn that
:11:20 information outside of counsel?
10:11:30 A. I'm not sure specifically who it was
10:11:32 that told me at that time.
10:11:36 Q. Okay. Who could -- I mean what are
10:11:38 you remembering? This is a conversation or a
10:11:38 meeting?
10:11:40 MR. MURPHY: Objection to form. You
10:11:40 can answer if you understand the question.
10:11:46 A. What I recall is, and I believe the
10:11:52 time frame was '93, I recall reading a letter
10:12:04 from Dr. Eriksen of DA -- of -- what is it?
10:12:04 Q. CDC?
:12:08 A. CDC, yeah, Department of Health &

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Human Services, indicating that it came -- that an issue in his mind apparently had been raised on tobacco extracts. At that time I had conversations, and I can't recall exactly who it was with, to find out if Philip Morris was using tobacco extracts, and that's when I found out at that time we were.

Q. Do you recall if you had a conversation with Dr. Carchman about that, at that time in 1993?

MR. MURPHY: Again, Dr. Houghton, I would caution you to exclude from your answer any conversations that you had in the presence of counsel where counsel was present for the purpose of giving legal advice to Philip Morris on this or any subject.

A. I'm just not sure who it was that I asked at that time and got the answer back from.

Q. You don't recall if it was Mr. Burnley?

A. Mr. Burnley? I don't believe so.

Q. Do you recall if you had some responsibility for obtaining the answer to Dr. Eriksen's question?

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MR. MURPHY: Objection to form. You can answer the question if you understand it. John, what do you mean by obtaining the answer?

Q. Dr. Houghton, you said you remember that Dr. Eriksen was making some inquiries of Philip Morris with regard to tobacco extract in 1993?

A. What I recall is a letter signed by Dr. Eriksen that addressed tobacco extracts at that time, and I think it was late 1993. As a result of seeing that letter, I asked a question are we using tobacco extracts and that's when I was told yes, we are in I believe one brand at that time.

Q. Okay. And did you have some responsibility for responding to Dr. Eriksen's letter?

A. I don't recall if there was a response required or not.

Q. Up to that point in 1993, were you familiar with the term tobacco extract?

MR. MURPHY: We haven't established what point in 1993.

MR. PAYTON: We haven't.

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Q. But up to that point in 1993 when you see this letter from Dr. Eriksen, were you familiar with the term tobacco extract?

MR. MURPHY: Can you put a date on this, John?

Q. Can you put a date on this, Dr. Houghton?

A. What I recall is late in the year, maybe October/November, in that time frame.

Q. Okay. Up to that point when you see Dr. Eriksen's letter, were you familiar with the term tobacco extract?

A. The term's familiar. I just don't recall in reference to what.

Q. Was it a term that you were familiar with when you were the general manager of the Richmond processing plants from 1980 to 1983?

A. I don't recall the term at that time or having an idea what it meant at that time.

Q. From being the general manager of the Richmond processing plants you went to Europe and in 1983 became the director of R&D Europe, Middle East and Africa for Philip Morris International; is that right?

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A. That's correct.

Q. And in 1986, early 1986 I believe you came back to Philip Morris U.S.A. as the vice president for research and development; is that correct?

A. That's correct.

Q. And at that time Dr. Dunn reported directly to you as vice president?

A. That's the way I recall it, yes.

Q. How long did Dr. Dunn continue working at Philip Morris once you became vice president?

A. I don't recall exactly. He -- he reported to me for some period of time and then took retirement.

Q. A year, two years, three years?

A. Probably less than two years.

Q. You think one to two years?

MR. MURPHY: Objection. What is --

A. I'm guessing at it, but that's a time frame that I believe today may cover that.

Q. And do you recall having a conversation with Dr. Dunn about his taking early retirement or retirement?

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A. I recall having conversations with Dr. Dunn while -- while he reported to me at that time.

Q. Concerning his retirement?

A. I recall having conversations with Dr. Dunn on what he -- what his interests were in the future. What I recall, Dr. Dunn was a principal scientist reporting to me. He had been doing special projects and reporting to my predecessor before I got there. During the period of time that -- that he first worked for me there were some projects that he had been assigned he was working on. I recall at the time having some difficulty really identifying appropriate projects for him at -- a person that high up in the organization on the technical ladder. So I had conversations with him during the time frame that he worked for me on what would be appropriate kinds of activities. I was having difficulty finding what I felt was meaningful work for a person at his level.

Sometime during those discussions the concept of early retirement came up. I believe he brought it up. I wasn't aware what the

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10:20:50 possibilities were at the time. So I discussed
10:20:56 it with I guess it was vice president or director
10:21:04 of human resources. As a result of that, there
10:21:10 was a -- a what do you call it? -- a retirement
10:21:22 program offered to Bill and he -- he was in favor
10:21:28 of taking that program. It met, as I recall, his
10:21:34 needs, so he accepted this enhanced retirement
10:21:38 package that -- that enabled him to take full
10:21:40 retirement.

10:21:44 Q. Do you know how old he was, Dr. Dunn,
10:21:44 was when he took early retirement?

21:48 A. I don't recall how old he was.

10:21:52 Q. I take it when you say he took early
10:21:54 retirement, he was not 65?

10:22:00 A. As I told you yesterday, you can take
10:22:08 full retirement at 55 and 30 years of service
10:22:10 that I'm aware of, and I believe that was the
10:22:14 case also at that time. I'm just not familiar
10:22:18 right now with did this provide him with full
10:22:22 retirement or not. My impression is it did.

10:22:28 Q. Do you recall if there was any
10:22:32 dissatisfaction with Dr. Dunn's work at that
10:22:34 time?

.2:38 MR. MURPHY: Objection to form.

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10:22:40 Dissatisfaction on the part of whom?
10:22:42 Q. On your part. He reported directly
10:22:42 to you?
10:22:42 A. Yes.
10:22:44 Q. Did you have --
10:22:44 A. Okay, I think I can answer this
10:22:50 question. I didn't have dissatisfaction with the
10:22:54 quality of what he did. My issue was I -- I
10:23:00 didn't feel I -- I was providing him with -- with
10:23:04 the kind of level of challenge that somebody
10:23:08 at -- at principal scientist level in R&D should
: 23:14 be challenged by. As a result, I was having
10:23:16 difficulty really finding meaningful special
10:23:22 project work to ask him to work on. And I --
10:23:26 my -- my recollection is that -- that he felt
10:23:30 that he probably wasn't being challenged as much
10:23:32 as -- as he would have liked to have been
10:23:38 challenged at the time. And I believe this
10:23:42 retirement package that -- that was offered to
10:23:46 him was something that -- that allowed him to do
10:23:52 what he wanted to do and be financially in a good *
10:23:54 position at the time.
10:23:54 What I recall is he was very positive
23:56 about it.

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Q. Was his position as principal scientist filled once he retired?

A. I don't recall it being filled, no.

Q. Are there principal scientists today at R&D?

A. There are --

MR. MURPHY: Prior to March 24, 1994?

A. There are a few people at that level on the technical ladder, yes.

Q. Dr. Houghton, I want to ask you a few questions. I want to describe the area, this is not a question, just so you see what the area is. I want to ask you a few questions about how the research and development department keeps track of information, studies, reports, a library. I want to ask some questions like that.

So, Dr. Houghton, can you describe how information is retained and organized in the research center?

MR. MURPHY: Move to strike the preamble. You can answer the question.

A. What -- what we have organized is what's called a central file operation, and

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documents are generated and sent to central file and kept there in -- in either hard copy or else on occasion they're put on micro -- they used to be put on microfiche and I think it's microfilm now, but I'm not -- I'm not familiar with how -- how they operate within that section itself. But the purpose of that is to have the documents that are kept in a central location.

Q. Are studies that are done by scientists at the research center kept in any special way?

MR. MURPHY: Objection to the form of the question.

A. I'm -- I'm really --

Q. Let me ask the question again, a different question. Are studies that are done kept in central files?

MR. MURPHY: Objection to the form of the question. All studies, any studies, what's your question?

Q. Are studies, any studies kept in central files?

A. There are studies kept in central file.

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10:27:02 Q. Are there some studies that are not
10:27:04 kept in central files because of their
10:27:06 proprietary nature?
10:27:08 MR. MURPHY: Objection to the form of
10:27:08 the question. You can answer.
10:27:14 A. I'm -- I'm not aware if that's the
10:27:16 case one way or the other.
10:27:18 Q. Okay. So central files is the
10:27:22 repository of all studies; is that correct?
10:27:24 MR. MURPHY: Objection; lack of
10:27:26 foundation and objection to the form of the
27:26 question. You can answer.
10:27:32 A. From -- you know, my understanding is
10:27:34 that's where the documents are sent to be kept.
10:27:52 Q. And scientists that are working on
10:27:54 research projects at the research center maintain
10:27:58 what are called lab notebooks; is that correct?
10:28:00 MR. MURPHY: Objection to the form of
10:28:00 the question. You can answer.
10:28:04 A. Scientists, bench scientists are
10:28:08 issued lab notebooks, yes.
10:28:10 Q. Could you describe what a lab
10:28:10 notebook is?
28:20 A. A lab notebook is -- is a book given

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to the scientist, assigned to the scientist I believe by number, in which the scientist writes down what -- what the research is that they're doing and what the data is that they collect during their experimentation.

Q. And it can become -- strike that. Does a scientist have one lab notebook for his or her entire stay at the research center?

MR. MURPHY: Objection to the form of the question; lack of foundation as well. But you can answer the question.

A. My understanding is that if a lab book gets filled the scientist would turn it in and get a new lab book assigned to them.

Q. Are lab notebooks maintained in central files?

A. That's my understanding.

Q. Does the research center also have a library?

A. Yes, we do have a group that's referred to as the library.

Q. And does the library have publications that are from outside of Philip Morris?

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10:29:58 A. Yes.
10:30:00 Q. Journals?
10:30:00 A. Yes.
10:30:00 Q. And books?
10:30:00 A. Yes.
10:30:06 Q. Does it also have copies of materials
10:30:14 that are generated from inside of Philip Morris?
10:30:16 MR. MURPHY: By that, John, do you
10:30:18 mean other than work that has been published in
10:30:20 an outside journal?
10:30:20 MR. PAYTON: Yes.
30:26 A. I'm a little bit confused. What are
10:30:28 you asking, if you don't mind?
10:30:30 Q. In the library that the research
10:30:36 center maintains we have journals and books that
10:30:42 are published in the outside -- outside of Philip
10:30:44 Morris and they're maintained there. In addition
10:30:50 to that, does the library at the research center
10:31:00 have copies of studies that are done internal to
10:31:02 Philip Morris that are not published outside of
10:31:02 Philip Morris?
10:31:08 A. Well, as I mentioned before, the
10:31:12 central files organization would have that kind
31:16 of information, and it is part of the library.

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It -- the supervisor for that reports to the person in charge of the library. So as such, I guess you could call central files as a part of the library and would have those kinds of reports, et cetera.

Q. Okay. The library at the research center, is that open to the public?

MR. MURPHY: Objection to the form of the question. You can answer.

A. The building in itself is -- is not open to the public. I mean this is -- this is not the county library.

Have we allowed people from other departments in Philip Morris to utilize the library and its facilities and information? Yes.

Q. Now, Dr. Houghton, I believe we marked as Houghton exhibit something, I've forgotten, it's the document -- that's the document right there. What is that, Houghton Exhibit?

A. Three.

Q. Which is a December 1, 1986 Philip Morris Research Center report; is that correct?

MR. MURPHY: Just a moment, John.

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10:33:16 Q. This is a report?
10:33:18 A. Yes, it's an R&D report.
10:33:24 Q. And this report would be maintained in central files; is that correct?
10:33:32 A. I believe so.
10:33:40 Q. Do you see the upper right-hand corner has a little item that says "Accession number" and this one says 86-202?
10:33:48 A. Yes.
10:33:50 Q. Do you know what that means?
10:33:54 A. I'm not absolutely certain. I believe that is the number that allows -- that's the number assigned to the document I believe by central files when they receive the document.
10:34:14 Q. At the very bottom there's a box that says "keywords," do you see that, and this box of keywords says "Nicotine Transfer, Brazilian Cigarettes, Advance Cigarettes, Galaxy Cigarettes, Plot: Percent Nicotine Transfer Versus Tar," and there are other terms. Do you see those?
10:34:32 A. Yes.
10:34:34 Q. Do you understand what the purpose of these keywords is?

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MR. MURPHY: Objection to the form and lack of foundation.

MR. PAYTON: That was the question, does he understand what these keywords are.

MR. MURPHY: That's a different question. You asked him what the purpose was. First let's find out if he knows what they are.

Q. Do you know what the keywords are?

A. What I understand is somebody in the organization, and I'm not sure whom, would pick out certain words that may appear to give a -- to describe some of the information in a report and that these keywords can be used, if you want to look for something, you can ask for the -- have a key word search and get a lot of documents that may also have that key word assigned to it.

Q. Okay. As of March 24, 1994, do you know if the keywords had been put into a computer database?

A. I don't know if they're in a computer database. I believe they may be.

Q. Your understanding of the keywords is, take this first key word, nicotine transfer, that it should be possible to identify any

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10:36:16 documents that contain as a key word nicotine
10:36:20 transfer?
10:36:22 MR. MURPHY: Objection to the form of
10:36:24 the question; misstates prior testimony. You can
10:36:26 answer the question.
10:36:26 A. I think what it would be is a word
10:36:34 somebody associated with this document and if --
10:36:36 my understanding is if you could search for that
10:36:40 word this document ought to -- ought to be
10:36:44 identified with that key word.
10:36:48 Q. Right. And if that same key word had
:36:52 been identified with another document, then you
10:36:54 could also find that document?
10:36:56 MR. MURPHY: Objection.
10:36:56 Q. Yes?
10:37:00 A. I assume that would happen if you
10:37:02 have this database that allows you to search that
10:37:02 way.
10:37:30 Q. Do you know if central files at the
10:37:38 library, at the research center also has copies
10:37:48 of reports that were generated by Philip Morris
International?
10:37:54 A. I -- I don't know for sure if they
7:56 do.

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Q. When you were the, I believe it's the director of R&D, Philip Morris, Europe, Africa and the Middle East?

A. Yes.

Q. Do you recall if reports that were generated by the R&D department at Philip Morris International were sent to the research center?

A. There -- there were routine quarterly review -- or quarterly reports that were sent to individuals and there may have been one of them, one of those individuals may have been in Richmond.

Q. Okay. You don't recall if they were sent to individuals and then also to central files?

A. I -- I don't recall if say a quarterly report from Neuchatel was sent to central file in Richmond. I would assume they would have it in Europe.

Q. When you were the director of R&D, Philip Morris International, 1983 to '86, do you recall if reports generated in Europe also used the keywords?

A. I'm sorry, I don't recall at all.

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10:39:56 MR. MURPHY: Would this be a
10:39:58 convenient time to take a short break, John?
10:39:58 MR. PAYTON: Yes.
10:40:00 THE VIDEO OPERATOR: We're going off
10:40:04 the record. The time on the screen is 10:40:04.
10:40:04 (A recess was taken.)
10:58:54 THE VIDEO OPERATOR: We're back on
10:58:58 the record. The time on the screen is 10:58:59.
10:59:08 Q. Dr. Houghton, before the break I
10:59:14 asked you if you knew if Philip Morris
10:59:16 International's R&D used keywords and you said
59:26 you didn't recall. Do you know if as of March
10:59:28 1994 they had started using keywords?
10:59:32 MR. MURPHY: Objection; asked and
10:59:34 answered. You can answer the question again.
10:59:36 A. I just don't know.
10:59:52 Q. You testified that some Philip Morris
10:59:58 employees not at the research center have or can
11:00:02 have access to the library at the research
11:00:02 center; is that correct?
11:00:04 A. Yes.
11:00:14 Q. Okay. Is that access restricted?
11:00:16 MR. MURPHY: Objection to the form of
0:16 the question.

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Q. Do you know what I mean?

A. What I know is that we provide services to the engineering department through the library. How it's handled and what the -- how they handle requests for information or other services I just don't recall, I'm not familiar with it. But I know we do perform some services there for engineering and I believe for some QA activities that we provide some information services.

Q. When you became the director of R&D at Philip Morris International in 1983, was one of your responsibilities to give direction to the R&D at Philip Morris International?

MR. MURPHY: Objection to the form of the question. I think it's almost incomprehensible. John, what are you asking the witness? I just don't understand what you posed as a question.

Q. Dr. Houghton, you testified that one of your responsibilities currently as the vice president of R&D at Philip Morris U.S.A., is to provide some direction to the R&D department; is that correct?

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11:01:58 A. Yes.
11:02:00 Q. When you were the director of R&D at
11:02:02 Philip Morris International, was one of your
11:02:04 responsibilities to provide direction to R&D at
11:02:06 Philip Morris International?
11:02:08 A. Yes, as part of that I would set
11:02:14 priorities for the limited number of resources as
11:02:18 to what to do first, et cetera.
11:02:24 Q. Had you had any prior involvement in
11:02:26 R&D at Philip Morris before you went to be the
11:02:28 director of R&D at Philip Morris International?
:02:34 A. Prior to going to Europe, my
11:02:36 experiences with Philip Morris had been mainly in
11:02:38 manufacturing areas.
11:02:52 Q. When you started as the director of
11:02:56 R&D at Philip Morris International in 1983, did
11:03:08 you attempt to learn what the state of R&D was at
11:03:10 Philip Morris International?
11:03:10 MR. MURPHY: Objection to the form of
11:03:12 the question. If you understand it you can
11:03:12 answer.
11:03:18 A. As I mentioned yesterday, the
11:03:22 activities at Neuchatel within the R&D
3:30 organization were what I would -- what I would

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refer to today more as technical services. So what I attempted to do when I first went there is to understand what were their accountabilities, responsibilities, who were the customers and what was the kind of services that the organization performed for our customers.

Q. Did you undertake to review what research had been done by R&D?

MR. MURPHY: Objection to form. You can answer.

A. What I recall is -- is determining what it was that was being done, what the activities were. As I mentioned to you yesterday, they had an organization called research with some 25 or so people in it, but that I wouldn't -- I wouldn't characterize it as a basic research organization. The majority of what they did was aimed at understanding specific issues, technical issues that -- that faced the European or international markets they serviced.

Q. Would you characterize those as facing "how to" issues?

MR. MURPHY: Objection to the form of the question.

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Q. Do you know what I mean?

MR. MURPHY: I don't know what you mean. If the witness understands what you mean he can answer the question. But I think it's an inappropriate question.

A. I'm not sure what you mean by "how to," but they would have been -- what we would address is specific issues related to those marketplaces, questions that came up from local management that required analytical capability to answer.

Q. Dr. Houghton, would you agree with me that Philip Morris has for some time conducted research into why smokers continue to smoke?

MR. MURPHY: Objection to the form of the question.

A. There -- to my knowledge, we have looked at the question of why smokers smoke. We've looked at that in order to understand what directions new products should take.

Q. And has Philip Morris looked into the question why smokers continue to smoke?

A. I -- I don't -- in -- in reading the newspapers, et cetera, that is something I've read in the paper that was -- was attributed to

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Bill Dunn, some of his comments in the past. I don't -- I don't recall looking at why they specifically continue to smoke. What I understand is what we looked at is why cigarette smokers do smoke, aimed towards trying to define what are the benefits that we can offer smokers in our products in the future.

Q. Do you recall any research being done by R&D at Philip Morris International at the time you were there, 1983 to '86, relating to why smokers continued to smoke?

MR. MURPHY: Objection to the form of the question. You can answer.

A. I don't recall, in my position, directing research to answer that question during that period of time.

Q. Now, in 1986 when you become the vice president of R&D at Philip Morris U.S.A., did you attempt to understand what research was being conducted when you took over?

MR. MURPHY: Objection to the form of the question. Attempted to understand? What are you asking him, John?

Q. Did you, Dr. Houghton, when you

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became the vice president of R&D in 1986, learn what research was then being conducted by R&D?

MR. MURPHY: Objection to the form of the question. If you understand what he's asking you you can answer it.

A. Well, in taking the new position in January of '86, as part of understanding what my accountabilities and role was, I spent time trying to understand what it is that we were doing, but I don't believe I could tell you what all 600 or so people were doing at the time.

I do recall trying to -- to get an understanding of -- of what activities our people were involved in.

Q. And did you also try to get an understanding as to what it was Philip Morris had learned as a result of its past research?

A. I don't recall trying to get a history of Philip Morris R&D activities for 20 years prior to that. The people who reported to me had, I believe without exception, had been in R&D for some period of time and I could rely on them. But I don't recall doing an historical survey of R&D.

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Q. I didn't mean that. When you take over as vice president in 1986 and have as one of your responsibilities giving some direction to R&D, did you learn what it was that the R&D department knew about the products that Philip Morris was then selling?

MR. MURPHY: Objection; asked and answered. You can answer the question again.

A. What I recall was trying to get an understanding of what we were doing and trying to understand what -- what the priorities of our activities should be at that time. I -- I can't tell you right now what I specifically learned in 1986.

Q. Well setting aside what you specifically learned, did you try to specifically learn --

MR. MURPHY: Objection.

Q. -- whether you can remember or not, I'm just trying to see how you went about sort of scoping out your job.

MR. MURPHY: Objection; asked and answered. I think he's been through this, John. I think the question you put to him at this point

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is argumentative and is retreading ground you've already covered. Let's move on.

Q. Did you?

MR. MURPHY: Objection; asked and answered. Let's move on.

Q. Did you?

MR. MURPHY: Same objection. You can answer again, Dr. Houghton, in order to satisfy Mr. Payton, but I think this is really absurd.

A. What I recall is I have a new job, a lot of people. I can recall meeting with the people who reported directly to me at the time, trying to understand what it is that -- that Philip Morris R&D was doing at the time and undoubtedly I tried to understand why. Over a period of time I was responsible for setting priorities and what I recall is just trying to learn the job, understand what it is.

Q. Do you recall who the principal scientists were when you started in 1986?

A. You're asking me who everybody with the title principal scientist was in 1986 when I started. I don't know if I could give you all of the names off the top of my head right now.

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Q. Dr. Houghton, I didn't think I was asking that extensive a question. I thought there were only three principal scientists in 1986.

MR. MURPHY: Objection. John, you're arguing with the witness at this point. You said "Do you recall who the principal scientists were when you started in 1986?" If you are asking that question again I'll let him answer the question again.

A. I mentioned that Bill Dunn had the title principal scientist at the time. There was an engineer and Henry Merritt. There may have been others, I just can't recall.

Q. Do you recall if Cliff Lilly was a principal scientist then?

A. I don't recall what his title was in 1986. My impression was that ~~I~~ He may have been -- had the title research fellow. I'm just not sure of the exact timing.

Q. And in 1986 when you started as vice president, was Tom Osdene at the research center?

A. No, he was not.

Q. Did he, after you started, come to

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11:16:08 work at the research center?

11:16:10 MR. MURPHY: Objection to the form of

11:16:10 the question.

11:16:12 A. Excuse me?

11:16:14 Q. After 1986, did Mr. Osdene work at

11:16:14 the research center?

11:16:20 A. Mr. Osdene -- or Dr. Osdene was not

11:16:30 in R&D when I came in 1986 and he -- he did not

11:16:34 report to me any time after that either.

11:16:58 Q. Was one of your responsibilities as

11:17:04 vice president of R&D to prioritize research?

17:10 A. I had an overall accountability for

11:17:16 prioritizing the R&D activities, making sure that

11:17:22 the support and the personnel and finances were

11:17:30 available. But in order to prioritize research I

11:17:36 would rely on -- on people like Dr. Charles who

11:17:42 was a director of research at that time. And he

11:17:46 would define what the actual activities were, and

11:17:52 I would review with him what it is, on occasions,

11:17:56 that -- that was being done in research and we

11:18:02 would talk every -- almost every day.

11:19:08 Q. Dr. Houghton, can I ask you to take a

11:19:10 look at one of the exhibits we used in

19:16 Dr. Lilly's deposition.

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11:19:28 MS. ROBBINS: You've got to tell us which one.

11:19:30 MR. PAYTON: I'm going to hand it to him.

11:19:32 MS. ROBBINS: Oh, okay.

11:19:52 Q. It's number 2. I think very briefly we looked at this yesterday. I mean Lilly Exhibit 2 which you have open there.

11:19:58 A. Yes.

11:20:00 Q. That is --

11:20:02 MR. MURPHY: We looked at it for purposes of the format of the document yesterday; is that correct?

11:20:06 MR. PAYTON: Yes, I think we looked at it for that purpose.

11:20:08 MS. ROBBINS: You don't have any other copy?

11:20:10 MR. PAYTON: No, all I have is this.

11:20:12 MS. ROBBINS: We looked at it in the Lilly binder.

11:20:14 THE WITNESS: Excuse me, I got confused.

11:20:22 Q. I'll tell you what I'm going to do then, I'm going to ask very brief questions about

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11:20:28 this. If I want to ask further questions I'll
11:20:32 rip it apart and have copies made at the lunch
11:20:32 break.

11:20:34 MR. MURPHY: Okay, that's fair, John.

11:20:36 Q. We looked at this document yesterday
11:20:42 I think just to look at the form that was used.

11:20:46 A. Oh, I recall, this is where you had
11:20:46 questions about approved.

11:20:48 Q. Yes, right.

11:20:50 MR. MURPHY: Correct.

11:20:52 Q. This is Lilly Exhibit 2. It's dated
: 20:58 November 1971 and its report title is "Tar,
11:21:02 nicotine and smoking behavior," and it's written
11:21:10 by T.R. Schori, S-c-h-o-r-i. Do you know
11:21:10 Mr. Schori?

11:21:12 A. No. I told you yesterday I've never
11:21:12 met -- met him.

11:21:14 Q. And it's approved by Dr. Dunn. Do
11:21:16 you see that?

11:21:16 A. Yes.

11:21:38 Q. Okay. Could you go just to the
11:21:46 introduction, it's Page 3. And like I said, I am
11:21:48 going to have more questions, but I'll save most
: .1:52 of those. The first question on Page 3 in the

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introduction is "Why does the smoker continue to smoke?" Do you see that?

A. Yes, I do see that.

Q. Do you recall reviewing any Philip Morris studies on that topic?

MR. MURPHY: When?

MR. PAYTON: At any time.

MR. MURPHY: At any time during the course of his tenure at Philip Morris?

MR. PAYTON: At any time, that's correct.

MR. MURPHY: Okay, prior to March 24, 1994 you can answer the question.

A. As I mentioned earlier, and it's interesting, that I thought that kind of question had been attributed to Dr. Dunn as part of what he said or was attributed to him in the press that -- that he was looking at. I have not read specifically any of his work, nor do I recall reading this work, and I don't recall as we sit here today having looked at the question of why does the smoker continue to smoke in -- with reference to Philip Morris research.

Q. Dr. Houghton, do you recall having a

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conversation with Dr. Dunn once you became a vice president in 1986 about research that Dr. Dunn had supervised?

MR. MURPHY: Objection to the form of the question; lack of foundation. You can answer the question.

A. I don't recall having discussed with Dr. Dunn research that he may have supervised like this 15 years earlier. I don't recall those conversations.

Q. Do you recall having a discussion with Dr. Dunn generally about the research that he had supervised?

MR. MURPHY: Objection to the form of the question; lack of foundation. You can answer.

A. I -- I certainly may have. I don't recall asking him what -- what work he had done in the past or supervised in the past. I just have no recollection of a conversation like that.

Q. Dr. Houghton, are you familiar -- strike that. As of March 24, 1994, were you familiar with research that Philip Morris had done on whether or not smokers have daily intake

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quotas for nicotine?

MR. MURPHY: Objection to the form of the question.

A. I was -- I was aware of market research studies that -- or evaluations that define the average number of cigarette consumption, but I don't recall seeing work or discussing work that said -- that related to -- to some sort of nicotine requirement, is that the word you used?

MS. ROBBINS: Quota.

MR. MURPHY: Intake quota.

A. Intake quota.

Q. You don't recall that?

A. No.

Q. And do you recall research that related to a nicotine dose requirement --

MR. MURPHY: I object to the form.

Q. -- that smokers have?

MR. MURPHY: I object to the form of the question. You can answer again.

A. What do you mean by nicotine dose?

Q. That smokers require a minimum amount of nicotine.

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MR. MURPHY: I object to the form of the question. I think it's been asked and answered. You can answer again.

A. I don't recall having a conversation that the subject of which was some minimum nicotine dose as you call it.

Q. And you also don't recall reviewing any documents that indicated that?

MR. MURPHY: Object to the form of the question.

A. I don't recall specifically reading a document that says that.

Q. Dr. Houghton, are you familiar with the phrase nicotine titration?

A. I've -- I've heard that phrase used, yes.

Q. Do you understand what the phrase means?

A. My understanding of the phrase is that it refers to a position that people smoke in order to -- to achieve some nicotine, theoretical nicotine level.

Q. And does it also refer to the fact that smokers change their smoking habits in order

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to achieve that minimum nicotine level?

MR. MURPHY: I object to the form of the question. You can answer the question.

A. For me, the term when brought up didn't bring that -- that issue up. Whether somebody has written that -- that term can also mean that or not, I'm just not aware.

Q. And was nicotine titration the subject of research by Philip Morris?

MR. MURPHY: Object to the form of the question. Time frame, John?

MR. PAYTON: Prior to March 24, 1994.

A. And when you say nicotine titration it means?

Q. Your definition of the term.

A. I don't recall any research at Philip Morris, that I directed at Philip Morris to -- to determine a nicotine titration, and I don't recall reading anything on Philip Morris work.

Q. And is your familiarity with the term nicotine titration derived from your experience at Philip Morris?

A. I told you I was familiar with the

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term, I had heard it. I don't -- I don't know if it's -- if I read it because somebody at Philip Morris had said something to me or I had read it in a newspaper. It is a term I've heard. It may -- may have been something I read in -- in literature. I don't recall where it was -- where I heard the term.

Q. Dr. Houghton, are you aware of the reputation of the Philip Morris Research Center?

MR. MURPHY: Objection to the form of the question. What do you mean, John?

Q. Is it a respected research center?

MR. MURPHY: Objection to the form again. You can answer, Dr. Houghton.

A. I have a question. Reputation to whom?

Q. In the scientific community.

A. Which scientific community?

Q. The cigarette research scientific community.

A. I would -- I would believe that the research center is -- is considered a state-of-the-art facility that does good work within the industry. I would -- would believe

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11:33:06 that if you asked the same question of -- of
11:33:08 perhaps the government laboratories you might not
11:33:12 get the same assessment from them as you would
11:33:18 get within the industry. I think we have a good
11:33:18 laboratory with good people.

11:33:22 Q. The best in the industry?

11:33:24 MR. MURPHY: Object to the form of
11:33:26 the question. I think the witness has answered
11:33:26 your question, John.

11:33:30 A. I think -- I think within the
11:33:34 industry we're -- we're an excellent laboratory.
13:38 I don't know if other people would -- would say,
11:33:42 hey, somebody else is better than us or bigger
11:33:48 than us. I think -- I think we do -- we have a
11:33:50 good laboratory with good people.

11:34:32 Q. Dr. Houghton, is nicotine considered
11:34:36 by Philip Morris to be the most important
11:34:40 ingredient in cigarette smoke?

11:34:42 MR. MURPHY: I object to the form of
11:34:44 the question. You can answer.

11:34:48 A. I can -- I can answer for Ken
11:34:48 Houghton.

11:34:50 Q. Okay.

4:52 A. I don't know what you mean by Philip

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11:34:56 Morris per se, but for me the most important
11:34:58 thing in the cigarette is the consistency of the
11:35:02 taste, that's what the consumer tells us. That's
11:35:06 why we've been successful. We provide consumers
11:35:08 with products that taste good and they're
11:35:14 consistent because the quality is consistent.
11:35:16 And they like our products and we've been
11:35:16 successful at it.

11:35:20 Q. Do you know how Philip Morris
11:35:24 achieves a consistent product?

11:35:26 MR. MURPHY: I object to the form of
35:30 the question; very vague and ambiguous. In what
11:35:32 respect are you talking about, John?

11:35:34 Q. Dr. Houghton, what did you mean when
11:35:36 you said that the success of Philip Morris is due
11:35:40 to producing a consistent product?

11:35:42 A. That when the consumers are buying
11:35:48 one of our products, when they smoke, buy the
11:35:50 next pack, what they expect it to taste like is
11:35:52 what they find.

11:35:58 Q. You mean the products all conform to
11:36:02 precise specifications?

11:36:04 MR. MURPHY: Object to the form of
36:06 the question; misstates the witness's testimony.

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You can answer it.

A. What I said is that our consumers take a cigarette out of a pack that we provided, they smoke it, they have an expectation of what it's gonna taste like and that's what they get.

Q. Do Philip Morris's products conform to precise specifications?

A. Do we have specifications for cigarettes on the materials, et cetera? Yes.

MR. MURPHY: He's asking you a different question, Dr. Houghton, which is do the Philip Morris cigarettes which are manufactured and sold conform to those specifications.

Q. Conform to those specifications.

A. We attempt in manufacturing to have the cigarettes conform to the specification for that cigarette.

Q. What the smoker gets out of a cigarette is just the smoke; is that correct?

MR. MURPHY: I object to the form of the question.

A. What do you mean gets out of?

Q. Let me go back and ask an earlier question again. Do you consider nicotine to be

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the most important ingredient in the smoke?

MR. MURPHY: Objection; asked and answered. You can answer the question again, Dr. Houghton.

A. The most important thing in the smoke for the consumer is the taste of the product. Does nicotine contribute to the taste? Yes, I think it does contribute to the taste. If it didn't contribute to the taste probably the de-nic cigarette would have been that much better.

But there are a lot of things, to the smoke that * contribute to the taste. It's the whole experience that our smokers get when they light up our products.

MR. PAYTON: Would you mark this as Exhibit 12.

(Houghton Exhibit 12 for identification, document entitled "Study of why people smoke," production numbers PA 730433 through PA 730436 or 2020153288 through 2020153291.)

Q. Dr. Houghton, you've just been handed what's been marked Houghton Exhibit 12, a

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document that's entitled "Study of why people
smoke." It has a date at the top handwritten
that I believe is 6/27/89. It has production
numbers PA'730433 through PA 730436 or 2020153288
11:40:00 through 3291. This document was produced from
11:40:04 your files. Actually, this is the only document
11:40:08 that was produced from your files.
11:40:10 Do you recognize this document,
11:40:10 Dr. Houghton?
11:40:12 MR. MURPHY: John, just before you
11:40:14 ask the question. I don't dispute based on any
:0:16 personal knowledge or information the date of
11:40:22 June 24, 1989, but on the copy that Barbara and I
11:40:24 and the witness have it's difficult to read the
11:40:32 year. And I'm not sure whether it's '84 or '89.
11:40:34 Q. Dr. Houghton, would you go to the
11:40:40 last page of this document, and do you see on the
11:40:42 last page of the document at the bottom there are
11:40:44 some references to, and I'll just read the little
11:40:48 phrase, "And now in July of 1987," do you see
11:40:52 that? And I am using that as some point in time
11:40:58 that this document is at least a '87 document.
11:41:02 That's the only way I can try to figure out what
1:02 the handwriting means.

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11:41:04 MR. MURPHY: Okay, well you can --

11:41:06 MR. PAYTON: I can't read it any better than that.

11:41:08 MR. MURPHY: You can examine the witness and we'll figure out the date if we can.

11:41:10 Q. Dr. Houghton, do you recall this document?

11:41:14 A. Can I -- can I read through it?

11:41:14 Q. Sure.

11:45:10 A. Okay.

11:45:12 Q. Do you recall this?

45:14 A. Do I? Specifically, no.

11:45:16 Q. It appears to relate to a presentation. Do you recall the presentation? There are references to slides throughout.

11:45:30 A. I don't recall specifically if -- if this was a presentation or not.

11:45:34 Q. Do you recall if this was a presentation you made?

11:45:38 A. I --

11:45:38 MR. MURPHY: Objection to the form of the question and lack of foundation. You can answer.

45:44 A. I do not know if this was a

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presentation made, and I don't recall making this presentation if that's what it is.

Q. Do you recall research in this time frame? And you first get to the R&D -- this is 1987 I believe, do you recall when this is at all?

MR. MURPHY: I'm not sure, John, is it '87 or is it '89? I just don't know if we can infer a date. It could be presumably any time after July of 1987.

MR. PAYTON: I agree with that.

A. I cannot confirm the date outside of what it does say in I guess it's the fourth page, "Now in July of 1987."

Q. Does the title of this, "Study of why people smoke," does that refresh your recollection at all as to the studies that are being discussed in here?

MR. MURPHY: I object to the form of the question. Do you understand what you're being asked?

A. I think I said before that we had pursued for long-term product development needs an understanding of why people smoke, and what it

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is that they want.

Q. The first paragraph of this, and the last sentence of the first paragraph says "Our core concept stems from the belief that tobacco is used by people to moderate their arousal levels, providing them the ability to enhance performance and control mood." Are you familiar with that concept?

A. I've heard those ---those terms before, the fact that smoking does or use of tobacco does enhance performance.

Q. And moderate their arousal levels?

A. I've heard the terminology. What it means to me is the ability to -- to relax, et cetera.

Q. Do you know if this is a Philip Morris hypothesis --

MR. MURPHY: Object to the form.

Q. -- that was pursued by the research center?

MR. MURPHY: Object to the form of the question. You can answer.

A. The theory of arousal modulation I wouldn't say is a Philip Morris theory. What I

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do recall is that it was a way of defining the ability to control your mood, relax, et cetera, that was utilized -- as you can see, it's in parentheses -- by one individual at least that I know of.

MS. ROBBINS: Quotation marks.

MR. MURPHY: Quotation marks.

A. Yes, quotation marks.

Q. Who is the individual?

A. That term I've heard used by Danny Ennis in describing smoking.

Q. Who is Danny Ennis?

A. He was a scientist that worked in product evaluation at Philip Morris.

Q. The bottom of the page has as a paren, "Slides of electrical device and aerosol device." Do you know what the electrical device is that's being referred to there?

MR. MURPHY: I object to the question to the extent that it would call for any details concerning the design of any future product that Philip Morris may have at any time considered or be considering. I will let him answer the question generally as to his general

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understanding, but based upon the court's May 17, 1995 ruling, I would instruct the witness to refrain from describing any design details that may or may not have been contemplated with respect to any product not currently manufactured and sold in the United States. By currently I mean March 24, 1994.

Q. Dr. Houghton, I'm actually not interested in the details. Is the term electrical device referring to a nicotine delivery device?

MR. MURPHY: Object to the form of the question. You can answer.

A. I -- without seeing the slides and really understanding, my understanding of that would be a -- it was probably a precursor to what we are pursuing as a new product concept and as such it would be not, I believe, described as a nicotine delivery device, but a cigarette.

Q. Are you familiar with the term nicotine delivery device?

MR. MURPHY: Object to the form of the question. You can answer it.

A. Am I familiar with it?

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Q. Yes.

A. I have heard it used in describing products by -- by -- in the press, et cetera.

Q. It's a term that's used by Philip Morris R&D, isn't it?

MR. MURPHY: I object to the form of the question. You can answer.

A. It may have been used as a -- in response to issues that came up in the press in the past.

Q. And the reference at the bottom of the first page to an aerosol device, do you know what that's referring to?

A. I do not know specifically what it's referring to, but -- but the fact is that cigarette smoke is an aerosol. So I don't know what it means in this.

Q. Let's turn the page. Page 2 reads at the top, "These areas appear to be transitional states that will lead to the article of the future that replaces cigarettes." Are you familiar with a nicotine aerosol product?

MR. MURPHY: I object to the question to the extent, again, John, that you purport in

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your question to call for any details with respect to any future product or consideration at any time by Philip Morris. I'll let him answer the question in a very general sense, but I would caution the witness not to reveal any details with respect to potential designs.

A. Could you ask the question again.

Q. Sure. Are you familiar with a nicotine aerosol product?

A. No, I am not familiar with a nicotine aerosol product.

Q. Dr. Houghton, are you familiar with the term that's used on this Page 2, the term optional smoking device?

MR. MURPHY: It says optional device.

Q. Optional smoking device.

MR. MURPHY: I'm sorry, below, there are two references. You can answer the question, Dr. Houghton.

A. I'm not specifically sure, I'm not really sure what they meant by that or what was meant in this thing by optional smoking device, just reading it here.

THE VIDEO OPERATOR: This is the end

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11:54:40 of videotape number 3. The time on the screen is
11:54:44 11:54:45.
11:56:02 (A recess was taken.)
12:06:42 THE VIDEO OPERATOR: This is
12:06:46 videotape number 4. Today is Tuesday, July 25th,
12:06:50 1995. This is the continuation of the deposition
12:06:54 of Dr. Houghton. The time on the screen is
12:06:56 12:06:56. You're on the record.
12:07:00 Q. Dr. Houghton, when you were the
12:07:04 director of research and development in Europe at
12:07:04 Philip Morris International, do you recall any
07:08 research into nicotine delivery?
12:07:18 A. What -- what do you mean by nicotine
12:07:18 delivery?
12:07:20 Q. I believe I asked you if you were
12:07:24 familiar with that term yesterday and I thought
12:07:26 you said yes.
12:07:28 A. I believe at the time I -- I told you
12:07:30 that for me it meant the amount of nicotine
12:07:34 delivered in mainstream smoke.
12:07:36 Q. From the filler?
12:07:38 A. From -- from the cigarette, yes.
12:07:42 Q. Using that definition of nicotine
07:46 delivery, are you aware -- were you aware of any

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research into nicotine delivery when you were the director of R&D at Philip Morris International?

MR. MURPHY: I object to the form of the question. Are you asking him whether in his capacity as director of R&D at Philip Morris International he was aware of any measurements having been taken of tar and nicotine in smoke?

MR. PAYTON: No.

Q. When you were the director of R&D at Philip Morris International from 1983 to 1986, were you aware of any research into nicotine delivery?

MR. MURPHY: I still object to the form of the question. You may answer if you understand the question.

A. Obviously, we did a lot of testing of cigarettes, okay, our products as well as competitive products in the European marketplace at the time, and as such, we measured the -- what I refer to as -- as the delivery of nicotine in mainstream smoke. I -- I don't -- I don't know of specific research, or I don't recall specific research that would be -- that -- that I would characterize as research on nicotine delivery at

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that time.

Q. Do you recall any research on nicotine transfer?

MR. MURPHY: Objection to the form of the question. You can answer it if you understand the question.

A. I'm not -- I'm not sure at that time if even I would have understood what the -- what that term was, nicotine transfer. I just -- I don't recall work at that time that would meet your definition.

Q. And once you became the vice president of R&D of Philip Morris U.S.A. in 1986, did you learn of research into nicotine delivery that the research center had conducted?

MR. MURPHY: Object to the form of the question. You can answer.

A. In the research center we did -- we did and still do development work. We -- at this time we -- we perform analysis on cigarettes, our cigarettes, competitors' cigarettes, all of it aimed at understanding how much nicotine is delivered in mainstream smoke when -- when the cigarette is smoked. I -- I'm -- I'm just not

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sure what you're referring to when you say research on nicotine delivery. If you've got a document you want me to look at, I'll be willing to look at it, but I'm -- I'm kind of lost on -- on terminology. What I call nicotine delivery I'm not sure is what you're talking about.

Q. Do you understand the term nicotine pharmacology?

A. I've -- I've heard the term, but pharmacology is -- is definitely not one of my areas of expertise. I have people who -- who work at R&D who are familiar with pharmacology and are trained in -- in that science and have done graduate work in that science, but it's -- it's not an area that I'm familiar with.

Q. Could you define the term?

A. I'm -- I've had no training in pharmacology. I -- I wouldn't know how to technically define the thing. I -- I just don't know how to do it.

Q. Okay. Do you know if Dr. Ellis is knowledgeable about nicotine pharmacology?

MR. MURPHY: I object to the question. That's been asked and answered. You

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may answer again.

A. As I told you earlier, I don't know what Dr. Ellis knows, but Dr. Ellis has been trained in the area of pharmacology, and I think I mentioned that she has a Ph.D. from Vanderbilt, I believe, in pharmacology.

Q. And do you know if Dr. Carchman is knowledgeable about nicotine pharmacology?

A. I -- I don't know what he knows in the area, but he also has had extensive education in the area of toxicology I believe. But also taught in -- in medical college -- at the Medical College of Virginia. As such, he may be -- he may have knowledge in the area of pharmacology. I -- I cannot state what he knows.

Q. And do you know if Dr. Charles is knowledgeable about nicotine pharmacology?

A. I believe Dr. Charles's education or his Ph.D. is also in the area of toxicology and he has been in research for a long period of time. I believe he studied medicine for part of his education also, so he may have -- I can't -- I can't swear that -- what his knowledge level is in pharmacology.

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12:14:42 Q. Have you heard the term
12:14:46 pharmacologically active nicotine?
12:14:48 A. I've heard the term, yes.
12:14:50 Q. Do you understand what that term
12:14:50 means?
12:14:54 A. I have an understanding of what it
12:14:56 means. I wouldn't -- I wouldn't say that it is
12:14:58 technically correct.
12:15:00 Q. What is your understanding of what
12:15:04 the term pharmacologically active nicotine means?
12:15:10 A. My understanding is that nicotine
15:14 is -- is defined to have pharmacological activity
12:15:22 because it -- it does have an impact on central
12:15:28 nervous system and -- and I believe peripheral
12:15:36 nervous system, but that's my understanding.
12:15:38 That's not my area.
12:15:48 Q. Okay. Do you know if nicotine salts
12:15:50 are pharmacologically active?
12:15:54 A. I don't know.
12:15:56 Q. Do you know if nicotine bases are
12:15:58 pharmacologically active?
12:16:00 A. Like I say, I've heard that nicotine
12:16:02 has pharmacological activity. I don't know in
16:06 what form or if there's a difference.

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Q. Dr. Houghton, are you familiar with ammonia chemistry as it relates to cigarettes?

MR. MURPHY: I object to the form of the question. There's no foundation for the question. You can answer the question.

A. I have some familiarity with ammonia in tobacco, yes.

Q. And what is ammonia used for in connection with cigarettes?

MR. MURPHY: I object to the form of the question; lack of foundation. You can answer the question.

A. Well, ammonia is a naturally occurring component in tobacco.

Q. Dr. Houghton, do you know if Philip Morris uses ammonia that is not a naturally occurring component of tobacco in its manufacture of cigarettes?

A. Philip Morris uses ammonia and ammonia salts in processing.

Q. Do you know what the ammonia salt is that Philip Morris uses?

MR. MURPHY: I object to the form of the question. You can answer.

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12:17:52 A. In the -- if you -- if you're
12:17:56 asking -- would you ask a specific application
12:18:00 or -- or process that you want me to talk about.
12:18:08 Q. Well, I'd like you to identify those
12:18:12 places in the manufacture of cigarettes that
12:18:16 ammonia that is not naturally present in tobacco
12:18:16 is used by Philip Morris?
12:18:26 A. I can -- I can describe how ammonia
12:18:30 or ammonia salts are used in the manufacturing
12:18:34 of -- of the reconstituted tobacco that's
12:18:36 referred to as RCB or BL.
·18:38 Q. Okay.
12:18:38 A. If that's what you're asking.
12:18:40 Q. Fine. Let's do RCB.
12:18:46 A. Okay. In RCB process what we're
12:18:52 attempting to do is take small pieces of tobacco
12:18:58 that are -- result either from grinding up stem
12:19:02 material that -- that's a by-product of the
12:19:10 stemmery operation, and small pieces of tobacco
12:19:14 that are generated during the manufacturing of
12:19:18 cigarettes, sometimes referred to as dust, and
12:19:22 also some fine materials that are generated in
12:19:26 the stemmery process that are very small pieces
·19:30 of the lamina of the leaf.

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12:19:34 All of these materials are then
12:19:40 ground to a very fine particle size, and what we
12:19:46 attempt to do is to make a -- convert them into a
12:19:48 sheet, or what looks like a sheet made of this
12:19:56 tobacco and in order to do that we have to stick
12:20:02 these pieces together.

12:20:04 And the way that's done today is what
12:20:06 you do is you take a combination of ammonium
12:20:12 hydroxide which is ammonia dissolved in water,
12:20:16 and you take diammonium phosphate along with some
12:20:24 flavor ingredients and the tobacco and you warm
20:28 it up, cook it for a period of time. And during
12:20:32 that period of time what the ammonia does in
12:20:38 that -- in that mixture is solubilize a material
12:20:44 that exists in the tobacco called pectin. Now,
12:20:50 pectin I believe in tobacco as you buy it would
12:20:54 be in the form of calcium pectate, which is an
12:21:00 insoluble salt, and what happens is the ammonia
12:21:04 replaces the calcium and you form ammonium
12:21:08 pectate. Ammonium pectate is water soluble, so
12:21:12 you've got this mixture that now has ammonium
12:21:18 pectate. Basically the pectin is freed from the
12:21:20 tobacco, and then what you do is you take the
21:26 mixture with the free pectin in there and you put

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12:21:34 it on to a belt and you start to dry it. And as
12:21:36 you're drying it, driving off the water, what you
12:21:38 do is you also drive off the ammonia.
12:21:40 So as a result of driving off the
12:21:46 ammonia, the pectin then becomes -- reacts back
12:21:50 to calcium pectate. The calcium pectate's
12:21:54 insoluble and what it does is it acts as an
12:21:56 internal adhesive like and sticks the -- the fine
12:22:02 particles of tobacco together and as you dry it
12:22:06 down, drive off more of the water and at the same
12:22:12 time drive off the ammonia, then what happens is
22:14 the sheet formation gets stronger and stronger
12:22:20 and by the end of the drying process you do have
12:22:26 a material that is basically the original tobacco
12:22:28 material stuck together in the form of a sheet
12:22:32 with some flavor ingredients added in there, and
12:22:38 then this material can then -- has the physical
12:22:40 properties that allow you to use it in making a
12:22:44 blend of tobaccos for the production of cigarette
12:22:46 filler.

12:22:46 Q. The---

12:22:50 A. So it's really a -- a reclamation
12:22:56 process, save the stuff that's not usable, be
23:00 able to use it, basically prevent yourself from

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12:23:06 having to buy that much more tobacco on the
12:23:08 marketplace, use up materials that would
12:23:10 otherwise be unusable.
12:23:14 Q. The particles that are ground up that
12:23:20 you described in the process, to very small size,
12:23:22 do you know what that size is? How small are
12:23:22 they?
12:23:32 A. I'd be guessing. I believe it's
12:23:40 somewhere 60 to a hundred mesh, and that's fine
12:23:40 particle.
12:23:46 Q. And without the ammonia, the
23:52 ground-up particles even with water added would
12:23:56 not naturally form a sheet?
12:24:00 MR. MURPHY: I object to the form of
12:24:02 the question. I think it slightly
12:24:02 unintentionally misstates the witness's prior
12:24:04 answer. But you can answer the question.
12:24:10 A. If you put all these materials
12:24:14 together and didn't have any ammonia in there to
12:24:18 free up the pectin, I don't believe you would
12:24:22 make a sheet that -- that would be useful in the
12:24:26 manufacturing or added to the blend for the
12:24:26 manufacturing of cut filler.
24:32 Q. The ammonia is put in in order to I

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think create the internal adhesive, that's your phrase; is that right?

A. To -- to solubilize the pectin that's in the tobacco, allowing it to be available when you drive the ammonia off and form the calcium pectate to stick the pieces together and give you a -- an integral product.

Q. How do you drive the ammonia off?

A. What we have is a series of driers, steel belt. You apply this material on to the steel belt, I recall about 18 percent solids which means maybe 82 percent of the weight is water, and as you drive through, you go through the belt -- the belt through the dryer, you heat up the air around it and that heats the belt as well as the air and drives the moisture from the tobacco.

In doing that, you lose ammonia at the same time.

Q. It just evaporates off?

A. It's driven off by the temperature, yes.

Q. Okay. And is all of it driven off or is just some of it driven off?

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12:25:58 A. There -- there is some ammonia
12:26:02 remaining in the finished product. I don't know
12:26:06 how much of that came from -- came from the fact
12:26:08 that it is present in the raw materials or at
12:26:12 least some of the raw materials, or how much of
12:26:14 it might be left over because you just didn't get
12:26:16 it all driven off.
12:26:30 Q. And is that the only reason the
12:26:36 ammonia is used in the RCB process to facilitate
12:26:38 this creation of the internal adhesive with the
12:26:40 pectin?
26:42 MR. MURPHY: Object to the form of
12:26:44 the question. You can answer.
12:26:46 A. That's my understanding, yes.
12:26:54 Q. Is ammonia used in the RL process?
12:27:02 A. As part of the flavor system for one
12:27:08 of the two products that they make today in the
12:27:14 RL process, there is an ammonium salt, diammonium
12:27:16 phosphate that's added as part of the flavor
12:27:16 system.
12:27:18 Q. And this is added as part of the
12:27:20 flavor system for RL that is used in
12:27:26 domestically-sold cigarettes, isn't it?
27:30 A. Some of the domestically-sold

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12:27:32 cigarettes contain that RL, yes.
12:27:40 Q. And is the use of the diammonium
12:27:48 phosphate for the purposes of flavor, is that
12:27:48 what you said?
12:27:54 A. My understanding, you have to go back
12:28:02 a long way, but at one time, for instance,
12:28:04 Marlboro would have had as part of the blend
12:28:12 maybe as much as 17 percent of that blend was --
12:28:22 was the RCB and there was a limited capacity in
12:28:28 the RCB factory for producing RCB. Yet our --
12:28:32 the demand for product was increasing.
28:34 So if you go back to I would say
12:28:44 probably 1970 or so, what was happening is, my
12:28:48 understanding, we had extra raw material that
12:28:52 resulted from the fact that our manufacturing was
12:28:54 increasing, so we had more raw material, but we
12:29:00 had a limited capacity to convert that at the BL
12:29:08 plant to RCB. And -- and that's when Philip
12:29:12 Morris went to Schweitzer to have them start
12:29:16 producing, taking these extra raw materials and
12:29:18 converting them into a sheet.
12:29:26 And I think, I'm not sure, but I
12:29:28 think I might have mentioned that the product
29:32 that we were getting from Schweitzer back in '74

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when I went there was called SRCB 44 I believe, and that stood for Schweitzer RCB. My understanding is that the flavor system for the Schweitzer product was -- was designed to give similar smoking characteristics to the total blend of recon in the blend as -- as the RCB was going down because demand for our cigarettes was going up and our capacity was limited. Then you had the Schweitzer sheet added to it.

So I believe when I first got involved with recon we probably had somewhere in the vicinity of maybe 14 percent RCB in the blend and about, I believe, about 3 or 4 percent of the Schweitzer product. So the flavor system in the Schweitzer product was set to allow you to replace some of the RCB in the blend with this new product, and my understanding is the diammonium phosphate that was put into the Schweitzer product as part of the flavor system was to allow Philip Morris to replace RCB, allow it to come down as demand went up and capacity remained constant with some Schweitzer sheet. And, therefore, when we started up the Park 500 process I believe we were using essentially the

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12:31:24 same flavor system that had been used on SRCB
12:31:24 from Schweitzer.
12:31:32 So my understanding is all of it was
12:31:34 to allow us to have a subjectively equivalent
12:31:36 total blend of recon equal to what we had had
12:31:40 previously when -- when all we had was RCB in the
12:31:44 blend. But that's understanding. I wasn't there
12:31:48 in '70 or whenever that decision was made.
12:31:56 Q. The inventory of raw materials that
12:31:58 was building up because of increased volume that
12:32:02 you just described, before Park 500 was built,
,32:06 was that waste product that was thrown away?
12:32:08 MR. MURPHY: Object to the form of
12:32:10 the question. You can answer.
12:32:16 A. Well, I don't know what the whole
12:32:18 leaf logistic situation looked like at the time,
12:32:24 but as I said, we were sending raw materials to
12:32:32 Schweitzer. My understanding was our
12:32:34 requirements, how much we were asking Schweitzer
12:32:40 to produce for us exceeded their free capacity
12:32:46 somewhere in the seventies -- say '72, '73 time
12:32:52 frame. As a result of that, it appeared that
12:32:54 either Schweitzer was going to have to build more
32:54 capacity or Philip Morris should.

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12:32:56 Q. Why didn't Philip Morris build additional RCB capacity?

12:33:06 A. I wasn't part of the decisionmaking. That happened before I came on -- on board in -- on the RL project. My understanding at the time was that there had been a previous group that was put together of government, industry and independent researchers, scientists, that had evaluated various recon processes, and what they were trying to do, my understanding is, to take a look at the different processes if you use essentially the same raw materials, and then evaluated the finished product based upon some scheme of biological testing, and I can't tell you what it was. But in doing that assessment, this group came to the conclusion that the Schweitzer process provided a product with the least amount of biological activity, however it was measured.

12:34:32 My understanding, I don't know, lore, history, in dealing with the RL process at that time was that the decision was made to go with the Schweitzer process as a result of work that had indicated that would generate a lower

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biological activity product.

Q. When you use the term biological activity, what are you referring to?

A. I told you I'm not really sure what their testing methodology was done by this group to do that, that evaluation. I'm not an expert on biological testing, but I do know that there are -- there are certain test protocols that can be used to measure properties of -- of materials or cigarette smoke, if that's a material, that can give at least some indication of a relative ability of a material to cause an effect, and there are tests that are done that can be used to get an overall impression of a level of biological activity. I don't think there is a specific definition that I know of of this test measures biological activity.

Q. Was one of the reasons that the RL process was favored over the RCB process that in the RL process, the Schweitzer process, potassium nitrate could be removed?

A. As I told you, I -- I wasn't part of the group that made a decision on why Schweitzer RL plant should be built instead of an RCB

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plant. I don't -- I don't even know if that was the decisionmaking that was going on at the time. I don't know if it was just one or just the other. All I know is they selected the Schweitzer process. And that was already selected before I came on board. What my understanding is is that part of that decisionmaking at least was based upon the results of this group that had assessed different recons.

And at that time, when we were building line 1 and getting ready to start up, I do not believe that we were at that time considering your question of the removal of nitrate. I -- I think it happened after that.

MR. MURPHY: Would this be a convenient time to take a break, John?

MR. PAYTON: Yes.

THE VIDEO OPERATOR: Going off the record. The time on the screen is 12:37:51.

(Luncheon recess: 12:37 p.m.)

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